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(54) **STRUCTURE AND METHOD FOR FORMING A THICK BOTTOM DIELECTRIC (TBD) FOR TRENCH-GATE DEVICES**

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(57) **ABSTRACT**

A semiconductor structure which includes a shielded gate FET is formed as follows. A plurality of trenches is formed in a semiconductor region using a mask. The mask includes (i) a first insulating layer over a surface of the semiconductor region, (ii) a first oxidation barrier layer over the first insulating layer, and (iii) a second insulating layer over the first oxidation barrier layer. A shield dielectric is formed extending along at least lower sidewalls of each trench. A thick bottom dielectric (TBD) is formed along the bottom of each trench. The first oxidation barrier layer prevents formation of a dielectric layer along the surface of the semiconductor region during formation of the TBD. A shield electrode is formed in a bottom portion of each trench. A gate electrode is formed over the shield electrode in each trench.